

WE CLAIM AS OUR INVENTION:

1. A rectifier, comprising:
a reference primary circuit;
a transformer having a primary side connected to said reference primary circuit and
having a secondary side;
first and second rectifiers in synchronous connection at said secondary side, said
first and second rectifiers each having at least three leads, one of said three
leads being a control lead; and
first and second clamping transistors, said first clamping transistor being connected
between said control lead of said first rectifier and said secondary side, said
second clamping transistor being connected between said control lead of said
second rectifier and said secondary side.

2. A rectifier as claimed in claim 1, wherein said secondary of said
transformer has first and second leads, said first rectifier having first and second
leads connected in series to said first lead of said secondary and said control lead
connected to said second lead of said secondary, said second rectifier having first
and second leads across said first and second leads of said secondary and said
control lead connected to said first lead of said secondary.

3. A rectifier as claimed in claim 1, wherein said first and second rectifiers
and said first and second clamping transistors are field effect transistors.

4. A rectifier as claimed in claim 1, further comprising:
a fixed voltage connected to control leads of said first and second clamping
transistors.

5. A rectifier as claimed in claim 1, further comprising:
an output of said rectifier;
a first filter element connected between said first rectifier and said output; and
a second filter element connected between said output and ground.

6. A rectifier as claimed in claim 5, wherein said first filter element includes
an inductance and said second filter element includes a capacitance.

7. A rectifier as claimed in claim 5, further comprising:
a third filter element connected between said second rectifier and ground.

8. A rectifier as claimed in claim 7, wherein said first and third filter elements
include an inductance.

9. A rectifier as claimed in claim 1, wherein said transformer is connected
with its windings at a same polarity.

10. A rectifier as claimed in claim 1, wherein said transformer is connected
with its windings at opposite polarity.

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11. A self-driven synchronous rectifier, comprising:

- a transformer having a primary and seconding winding;
- an input for an input voltage connected to said primary winding;
- a pair of rectifiers connected in a synchronous connection, said first rectifier including a source drain connection in series with a first lead of said secondary winding and a gate connected to a second lead of said secondary winding;
- a second rectifier having a source and drain leads connected across said first and second leads of said secondary winding and a gate connected to said second lead of said secondary winding;
- a first transistor connected between said gate of said first rectifier and said second lead of said secondary winding;
- a second transistor connected between said gate of said second rectifier and said first lead of said secondary winding; and
- a voltage source connected to gates of said first and second transistors.

12. A synchronous rectifier as claimed in claim 11, further comprising:

- a filter connected across said secondary winding of said transformer.

13. A synchronous rectifier as claimed in Claim 11, further comprising:

- a resonate snubber connected across said primary winding of said transformer, said resonate snubber including a filter.

14. A synchronous rectifier as claimed in Claim 11, further comprising:
a switch connected at said primary winding of said transformer.

15. A synchronous rectifier as claimed in Claim 11, wherein said first and
second transistors are field effect transistors.